

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

159566

Wednesday, April 12, 2017 4:13:02 PM

N900040100

Setup Start *NS1*

Stop *NS2*

6

Cust Item ID:

6

Customer:

Required Date: 5/2/2017 Req'd Qty: 6.00

Reference: SCHEDULED/S

Run Start *NR1*

Approvals: **Process Plan:** **Date:** **Tooling:** **Date:**

Stop ***NR2***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

**Insp.
Stamp**

0.00

130

0.42

HandFXtube

Hand Finishing Crosstubes

Memo

Per note 8 on page 1 of dwg D2940, Prep inner concave surface of support and apply 3M Scotch-Weld as per dwg. 24h of cure time. 135285

135285

MAY 23 2017

140

QC5- Inspect part completeness to step on W/O

0.00

140

0.12

QC

Quality Control

Memo

170

Identify as per dwg & Stock Location:

0.00

170

0.06

Packaging

Packaging

Memo

LOCATION : LG052

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Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
240 FA 250				Completed By 					
				Lead hand / Supervisor Approval Verification 					
				QC / QA Coordinator Approval 					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : _____							

159566

Wednesday, April 12, 2017 4:13:02 PM

N900040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

6

6

Customer:

Reference: SCHEDULED/S

Run Start *NR1*

Stop *NR2*

**Insp.
Stamp**

0.00

180

QC

Memo

0.60

Quality Control

DAS
21
9-89

MAY 26 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		

Root Cause				FAULT CATEGORY			
☐ Environment	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong		
☐ Design	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions		
☐ Doc/Data	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance		
☐ Equip/Tooling	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect		
☐ Handling/Pre	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing		
☐ Material	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved		
☐ Internal Transport	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing		
☐ Tribal Knowledge	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish		
☐ LOA	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread		
☐ Substation	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence		
☐ Past Expiry Date	☐ Manufacturing Process	☐ OTHER : _____					
☐ Misidentified	☐ Past Due						

Picklist Print

Wednesday, April 12, 2017 4:13:02 PM

Page 1

Work Order ID: 159566

159566

Parent Item: D2940-1

D2940-1

Parent Item Name: Support

Start Date: 4/19/2017

Required Date: 5/2/2017

Start Qty: 6.00

Required Qty: 6.00

Comments:

IPP C 02.11.26 Reformat; Added P/OKJ
IPP Rev:D Added priming as per Rev B 07-04-30 JLM
IPP E 08.03.19 Re-format Ec verified by DD
IPP Rev:F 08-10-22 add qc14 DD verified by:EC
11.08.04 as per dwg rev.C DD verf:EC
IPP Rev:G

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

DSK081

Manufactured No

110

Each

4.0000

0.5

4

DAS

DSK081

3

20
9-89

17-05-04

D2940-1 Turning Detail

Location

Loc Qty

Loc Code

MAT060

4

151723

4

3

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong		
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions		
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance		
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect		
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing		
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved		
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Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish		
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread		
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence		
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____					
Misidentified ☐	☐ Past Due						

DART AEROSPACE LTD		Work Order: 159566
Description: Ø3.250 Support		Part Number: D2940-1
Inspection Dwg: D2940	Rev: C	Page 1 of 1

FIRST ARTICLE INSPECTION DIMENSION SHEET

☒ First Article ☐ Prototype

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	5
HAAS Section								
AA	0.240	0.260		.250	.250	.250	.250	.250
AB	0.490	0.510		.500	.500	.500	.500	.500
AC	0.140	0.160		.145	.145	.145	.145	.154
AD	3.510	3.530		3.520	3.516	3.518	3.514	3.510
AE	1.633	1.673		1.665	1.663	1.664	1.667	1.662
AF	1.493	1.513		1.512	1.510	1.508	1.510	1.510
AG	0.040	0.060		.050	.049	.046	.048	.049
AH	0.188	0.193		.188	.188	.188	.188	.188
AI	0.140	0.160		.152	.154	.156	.153	.154
AJ	2.518	2.538		2.530	2.530	2.530	2.530	2.530
AK	0.040	0.060		.049	.049	.048	.049	.049
AL	0.010	0.020		.010	.010	.010	.010	.010
AM	0.140	0.160		.150	.152	.154	.153	.154
AN	0.350	0.450		.365	.365	.380	.380	.380
AO	0.240	0.260		.250	.250	.250	.250	.250
AP	0.150	0.170		.1535	.154	.155	.156	.152
AQ	0.053	0.073		.063	.063	.063	.063	.063
AR	101.64	105.64		103.64	103.64	103.64	103.64	103.64
AS	0.260	0.267		.260	.260	.260	.260	.260
AT	0.053	0.073		.063	.063	.063	.063	.063
AU	4.118	4.138		4.128	4.128	4.130	4.126	4.130
AV								
AW								
Accept/Reject								

Measured by: DAS 20	Date: 17-05-08
Audited by: DAS 9-89	Date: 17-05-12
Prototype Approval:	Date:

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	
B	07.05.08	Dwg Rev. updated	KJ/JLM	
C	07.07.18	Dimension AS revised	KJ/JLM	
D	08.04.22	Reformat	KJ/JLM	
E	12.01.31	Dwg Rev. updated	KJ	

DART AEROSPACE LTD		Work Order:	159566
Description: Ø3.250 Support		Part Number:	D2940-1
Inspection Dwg: D2940	Rev: C	Page 1 of 1	

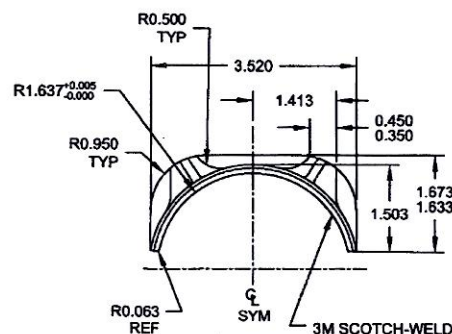
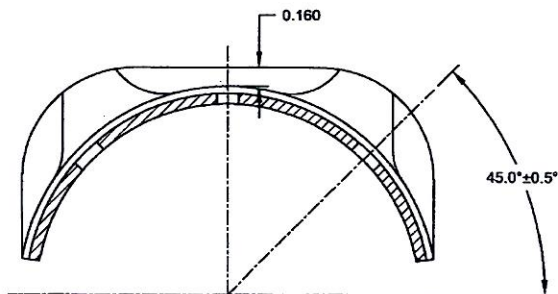
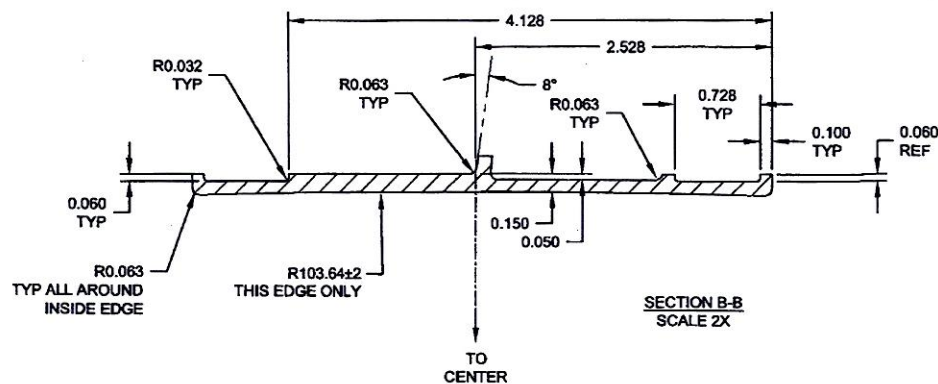
FIRST ARTICLE INSPECTION DIMENSION SHEET

☒ First Article ☐ Prototype

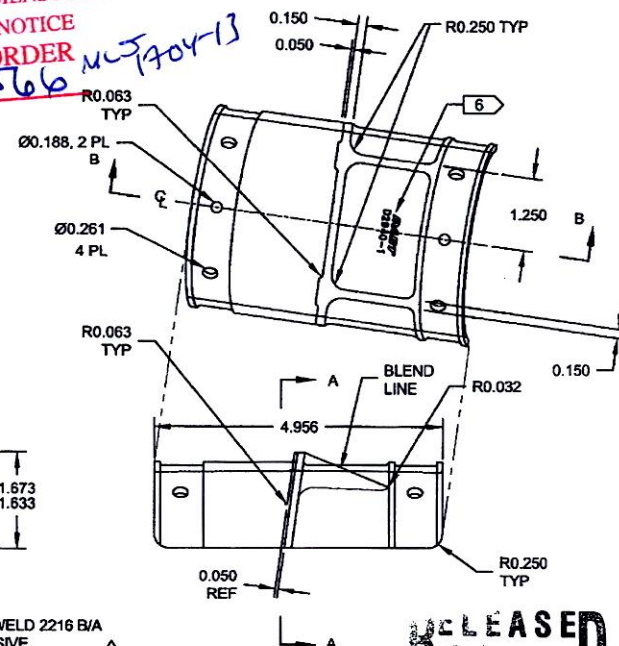
Dim	Min	Max	Go/No Go Gauge	Record Actual Dimensions				
				6 X	2	3	4	5
HAAS Section								
AA	0.240	0.260		.250				
AB	0.490	0.510		.500				
AC	0.140	0.160		.152				
AD	3.510	3.530		3.516				
AE	1.633	1.673		1.664				
AF	1.493	1.513		1.511				
AG	0.040	0.060		.050				
AH	0.188	0.193		.188				
AI	0.140	0.160		.153				
AJ	2.518	2.538		2.530				
AK	0.040	0.060		.049				
AL	0.010	0.020		.010				
AM	0.140	0.160		.151				
AN	0.350	0.450		.380				
AO	0.240	0.260		.250				
AP	0.150	0.170		.153				
AQ	0.053	0.073		.063				
AR	101.64	105.64		103.64				
AS	0.260	0.267		.260				
AT	0.053	0.073		.063				
AU	4.118	4.138		4.128				
AV								
AW								
Accept/Reject								

Measured by:	DAS 20 9-89	17-05-09	Date:	
Audited by:	DAS 44 9-89		Date:	17-05-12
Prototype Approval:			Date:	

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	
B	07.05.08	Dwg Rev. updated	KJ/JLM	
C	07.07.18	Dimension AS revised	KJ/JLM	
D	08.04.22	Reformat	KJ/JLM	
E	12.01.31	Dwg Rev. updated	KJ	



SHOP COPY
RETURN TO
ENGINEERING
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 159566 MCJ 7404-13



RELEASED
2011-07-28

NOTES:

- 1) MATERIAL: 17-4 PH STAINLESS STEEL, H900 OR H925 CONDITION
MIN UTS = 170 KSI (38 HRC)
(REF DART SPEC. D6104)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 (REF X.XXX = ±0.010) UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: DART LOGO (PER DART SUPPLIED GRAPHIC) AND PART NUMBER IN THIS AREA WITH 0.125 HIGH LETTERING
0.010-0.020 DEEP, PER DART QSI 044 6.3.
- 7) WEIGHT: 0.92 lb
- 8) FOR THE ENTIRE INNER CONCAVE SURFACE:
ABRADE SURFACE WITH 400-GRIT SANDPAPER. REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY 0.03" TO 0.05" THICK LAYER OF 3M SCOTCH-WELD 2216 B/A ADHESIVE TO MATING SURFACE OF SUPPORT. ALLOW TO CURE FOR 24 HOURS.

D2940-1 SUPPORT

C	RMV FINISH, ADD 3M 2216, ADD H925 MAT'L OPTION	CP	11.07.15
B	UPDATE PER NCR 642, PRIME INSIDE	PH	07.03.13
A	NEW ISSUE	CP	01.01.10
REV.	DESCRIPTION	BY	DATE
DESIGN	Q		
DRAWN	Q		
CHECKED	ASS		
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	11.07.15		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D2940
REV. C
SHEET 1 OF 1
TITLE Ø3.250 SUPPORT
SCALE NTS

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